Final Revision #5, Mar 31, 2004

Campus Needs Assessment

Pacific Valley School, 2003-04

AUDIT OF SOLID WASTE GENERATION, AND IMPACT ON LOCAL ENVIRONMENT

STANDARDS-BASED CONNECTIONS SET / LEARNING OBJECTIVES:

1. SCIENCE:

Standards:
Grade 6
5. Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:
5b. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.
6b – Students know different natural energy and material resources, and know how to classify them as renewable/non-renewable.
6c – Students know natural origins of materials to make common objects
7c - Construct graphs from data and develop qualitative statements about relationships between variables.
7d – Communicate the steps and results from an investigation in written reports and oral presentation.

Learning Objectives:

A. From a student-developed list of found waste items from school activity, students accurately classify in renewable/non-renewable categories.
B. Identify major origins of common resource materials found in collected school waste.
C. From above, develop an investigation of waste output that closely approximates the total waste generation by Pacific Valley School, and discovers strategies to optimally manage it.
D. Organize data and calculations in an informative graph form.
E. Be able to organize data results from audit to support communication of an informative overview of findings to community and school board members.
F. Students become knowledgeable of local ecology, including identification of life in marine, and other Big Sur regional environmental zones, and how they depend on their local habitats and resources, interact with each other, and could be affected by human activity.
G. Students demonstrate knowledge and comprehension of where our resources end up following usage. Demonstrate through a video recording with expository narration the process of the waste stream to landfill, recycling, and reuse, with background information comparing and contrasting what is shown with past (historical), present, and what we could do to help in future.

2. MATH

Standards:
Number Sense
1.2 – Interpret and use ratios in different context
1.3 – Use proportions to solve problems.
Statistics, Data Analysis, Probability
2.5 – Identify claims based on statistical data, and in simple cases, evaluate validity of claims.
Mathematical Reasoning
2.1 – Use estimation to verify reasonableness of results.
2.2– Apply strategies and results from simpler problems to more complex problems.
2.3– Use a variety of methods (words, numbers, graph models) to explain mathematical reasoning.
Measurement/Geometry,
1.3 (Grade 5)– Understanding concept of volume and use appropriate units in common measuring systems.
Algebra/Functions
1.1 (Grade 5) – Use information taken from a graph to answer questions about an (environmental) problem.

Learning Objectives:
A. From a collected total mass of collected waste items, accurately quantify proportions of renewable and non-renewable material.
B. From samples taken during audit, accurately calculate waste output in volume (square footage) and mass (poundage) for both renewable and non-renewable material.
C. Meaningfully present claims about our waste output based on data and calculations, and explain graphs to an audience of community and school board members, and be prepared to answer audience questions, validating claims using calculated findings, including those represented in graphs.

3. HISTORY/SOCIAL STUDIES

Standards:
Grades 6-8 – Chronological and Spatial Thinking:
1. Students explain how major events are related to one another in time.
- Historical Interpretation: 3. Students explain sources of historical continuity and how combination of ideas and events explains emergence of new patterns. Tie these standards with grade 3's # 3.1-2 - Trace the ways in which people have used the resources of local region and modified the physical environment.

World History and Geography
6.1 - 2. Identify locations of communities that populated major regions of the world, and describe how humans adapted to a variety of environments.

Learning Objectives:

A. Ability to relate how our patterns of resource usage and waste output compare and contrast with that of human civilization preceding ours in certain different historical periods and world regions. Include an understanding of resource usage and probable equivalent waste output (with impact on environment) from different periods of our regional civilization, including prehistoric/native tribes, Spanish colonies in California, American settlers/Gold Rush, turn of 20th Century cities, to modern times.
B. Be able to present some of these comparisons in context with resource usage/waste generation/environmental impact determined for our contemporary local school life.

4. ART

2.7 – Create…works of art that express a personal statement demonstrating skill in applying the elements and principles of design. (grade 7)
2.5 – Select specific media and processes to express moods, feelings, themes, or ideas. (grade 6)
5.3 – Create artwork containing visual metaphors that express traditions and myths of selected cultures (grade 6)
Art – 2.3, grade 5, Demonstrate beginning skill in manipulation of digital imagery (incl. Video Standards:
5.2 – Create a painting, satirical drawing, or editorial cartoon that expresses personal opinions about current social or political issues. (grade 8)
1.1 – Describe the environment…using the elements of art and the principles of design.(grade 7)
2.6 - grade 6 & 7, 2.3, grade 8, Use technology to create original works of art.
2.5 – Assemble a found object sculpture reflecting a theme. (grade 5)
2.7 – Communicate values, opinions, or personal insights through an original work of art. (grade 5)

Learning Objectives:

A. Effective use of design principles to create a powerful visual impact through illustrations, graphs, maps, and design enhancements for use in an informative presentation of the theme: “Resource usage, waste generation, and environmental impact by our school”. Focus illustrations and design of graphs and models on creative expression of claims, values, and opinions derived from analysis of waste audit data.
B. Create unique, eye-catching assemblages created entirely from selected waste items, projecting themes: “Trash as a monster we must control”, and “our creative thought can provide ways to transform ugly trash into aesthetic beauty”
C. Learn basic use of technology, including videocam, and related software to create elements for presentation.
D. To gain a deep appreciation of the value of learning from the perspective of passing the learning to others. This appreciation will drive a powerful “hunger” to further learn, enhancing the development of student as a life-long learner (one of the overall goals in the school district’s Mission and Comprehensive Plan.)
E. Students will use their knowledge of design principles to create a compositionally effective image, employing visual metaphors, reflecting personal perception and insights of the environment around them. In this image they will make a connection between the school microcosm, and the surrounding environments,

and incorporate their perceptions of the culture and traditions of the Big Sur community (and elsewhere, worldwide). Students will gain a sense of perspective of their presence at the school site, and how it relates as a system contained within a larger system. (Big Sur's regional environment.)

5 LANGUAGE ARTS

Standards: (Note: audit project will be carried out by grades 6 & 7)
Writing 1.4 (Grade 6) – Research and Technology: Use electronic organizational features to locate information.
Writing 1.4 (Grade 7) – Identify topics; ask and evaluate questions, and develop ideas leading to inquiry, investigation, and research.
Writing 2.2 (Grade 6) – Write expository compositions that:

a. State a purpose
b. Explain a situation
c. Offer persuasive evidence to validate arguments and conclusions as needed.

Writing 2.3 – write research reports about important issues that:
(Grade 6) Support main ideas with facts, details, explanations…from multiple authoritative sources.
(Grade 7) Convey clear and accurate perspectives on subject.
Listening/Speaking 1.0 – Students deliver presentation that conveys ideas.
Listening/Speaking 2.2 (Grade 6) – Deliver informative presentations that:

a. Pose relevant questions sufficiently limited in scope to be completely and thoroughly answered.
b. Develop topic with facts, details, examples, and explanations from multiple authoritative sources.

Listening/Speaking 2.5 (Grade 6) – Deliver presentations on problems and solutions that…offer persuasive evidence to validate definition of problem and proposed solution.
Listening/Speaking 2.3 (Grade 7) Deliver research presentations…that pose relevant and concise perspectives on subject.
Penmanship 1.4 write fluidly in cursive or joined italic (used in "Trash Goon" lesson for grade 4-5 participants. See notes contained in that lesson).

Learning Objectives:

A. Perform a research process, including visits to resource and waste management websites, to find out about origins of common resource materials collected in the course of the waste audit. (tie in with Science learning objective B)
B. Write a clear expository paragraph(s) delivering background information about material usage (and waste) in present and past.
C. Write a conclusion report about audit findings with recommendations for future.
D. Write/speak an informative overview of audit results with persuasive statements (paragraphs) based on findings, advocating recommendations to school board and community members.

LESSON PLANS

ART

1. MY MAP OF WHERE I LEARN

Creating a personal map of school within local environment, depicting perceived surroundings, resources we depend on, and ecosystems we may affect.

Art:
Standards:
1.1 – Describe the environment…using the elements of art and the principles of design.(grade 7)
2.7 – Create…works of art that express a personal statement demonstrating skill in applying the elements and principles of design. (grade 7)
5.3 – Create artwork containing visual metaphors that express traditions and myths of selected cultures (grade 6)
History: Historical Interpretation: 3. Students explain sources of historical continuity and how combination of ideas and events explains emergence of new patterns.

Standards-based Learning Objectives:
Effective use of design principles to create a powerful visual impact through illustrations, graphs, maps, and design enhancements for use in an informative presentation of the theme: "Resource usage, waste generation, and environmental impact by our school". Focus illustrations and design of graphs and models on creative expression of claims, values, and opinions derived from analysis of waste audit data. (Students will use their knowledge of design principles to create a compositionally effective image, in map form, that reflects personal perception and insights of the school environment around them. Map will also reflect input/output of resources, a connection of the school microcosm with the surrounding environments. Students will gain a sense of perspective of their presence at the school site, and how it relates as a system contained within a larger system, the Big Sur's regional environment.)

Pre-assessment: Questions about locations of resources entering and exiting school environment "system". Locations include watersheds (adjacent creeks and well), garden, solar system, generator, garden, Highway 1 conduit, remote sources, such as farms, forests/paper mills etc. Also ask about primary sources to natural resources such as Sun and weather/water cycle. Exit of resources to be asked about are runoff onto ocean, septic system, composting of uneaten food matter, recycled materials, and trash for landfill, both taken to MRWMD.

Remediation Strategy: Exposure to ancient maps (included in lesson with book illustrations of ancient maps), and brief introduction to cartography. Also, discussion of project as more than just a map. It is also an imaginative aerial view of environmental features that student feels are personally important, thus "map" project is a personal statement. Basic composition and design principles taught in

previous Art classes will apply, as “map” will be primarily an artistic statement, which should have principle features such as a focal point/center-of-interest. Students will be reminded of these aspects

Adopted Instructional Materials and Other resources:
Illustrated book of ancient maps
Map drawn by Allan in UES workshop (in SEER workbook)
Large pieces of drawing paper (for ample “expansion space)
Pencils, pens

Description/Procedure:

- Introduce project as a map of how each of us personally views our surroundings, and that each student’s map will be unique. Tell students about map I was assigned to create as a state (UES) workshop participant. Solicit comments and ideas from students of what could go in such a map. (but don’t show yet!)
- Show ancient maps in book. Are they totally accurate inn measurements etc? (no). Do they show personal thoughts, feelings, and imagination of cartographer who made map? (yes). How are ancient maps different from modern ones? Similar?
- Ask students what resources enter the school’s usage, and where they come from (such as paper, from trees in the Pacific Northwest). Ask students where these resources might go after being used up (to landfill in Marina? Recycle? Compost to feed plants?) Ask how these ideas might be shown in a map. Discuss the environments that surround us (ocean, Plaskett and Pruitt Creek watersheds, mountain terrain). Could these also be shown on our maps? What kind of pictures could we draw to show these and decorate the maps? Discuss some design principles that could be used to make them interesting. “Take time to do a good job, and be neat and clear with images and labels”
- Give students paper and pens to work with. Suggest an easy way to begin is to draw one item in middle of paper, and build everything around it (which is why a large piece is supplied…so you don’t run out of room). Another way to start is to sketch in basic perimeters, like school grounds, playground, and building boundaries, then fill them in.
- After students have progressed into creating own personal renditions of map, reveal map made at UES workshop.
- When maps are finished, trim, mount, and select for use in Campus Needs Assessment presentation to be given later in the year.

Teacher: David Allan

Timeline: First project to orient and interest students in larger Campus Needs Assessment endeavor. Begin first week of September. Allow 2-4 class periods to complete.

Assessment/Rubric:
Comprehensiveness- includes campus images linked with surrounding environments, showing resources in/out. Campus alone, 1-2, campus showing an outside environment and a resource, 3, campus showing multiple environments and resources, 4

Care in Work- Is focused effort, thought, imagination, and patience shown in drawing of imagery? Hasty, little thought involved, scribbled in: Filled with rich imaginative visual ideas, deep thinking involved, patient, neat work, best of student's capabilities.

2. <u>DON'T BE A TRASH-GOON!</u>

Cartoon caricature of type of behavior resulting in environmental abuse, including littering, pollution, and waste of valuable resource.

Standards:

5.2 – Create a painting, satirical drawing, or editorial cartoon that expresses personal opinions about current social or political issues. (grade 8)

2.5 – Select specific media and processes to express moods, feelings, themes, or ideas. (grade 6)

2.7 – Create…works of art that express a personal statement demonstrating skill in applying the elements and principles of design. (grade 7)

2.8 – Communicate values, opinions, or personal insights through an original work of art. (grade 5)

Language Arts Standard:
Penmanship 1.4 (grade 4) – write fluidly in cursive or joined italic.
(see note below on Skill Reinforcement)
Writing Strategies 2.5 (grade 6) – State a clear position on a proposition or proposal. (on how to deal with pollution, litter, and waste mismanagement)

Standards-based Learning Objectives:
Effective use of design principles to create a powerful visual impact through illustrations, graphs, maps, and design enhancements for use in an informative presentation of the theme: "Resource usage, waste generation, and environmental impact by our school". Focus illustrations and design of graphs and models on creative expression of claims, values, and opinions derived from analysis of waste audit data. (Communicate a strong statement of opinion about a social/environmental issue (polluting, littering, trashing Big Sur's beauty) through a satirical caricature of this disgusting type of behavior. Include writing skills in strength of statement with cartoon.).

Preassessment: see **"Note;"** following Procedure. This "Trash Goon" concept can act as an assessment in its own right. The cartoons are "reflections" of a child's view of undesirable behaviors that negatively impact our environment, and this visual impression can develop with experiences, such as the audit. The initial cartoon will reflect awareness and artistic expressions of moods, feelings, themes <u>before</u> experiences with lessons in this set. Follow-up cartoons can be created <u>after</u> audit, showing development gained from experience, thus informing future instructional strategies! As of Sept 17, when the **Coastal Cleanup** project was undertaken by all the students, the assessment potentials became clear. Children who were in process of creating the cartoons with slogans, notably refocused their expressions to the findings recorded on the Coastal Cleanup Data sheets (which performed as a form of waste audit for the local beaches). In particular, the students took note of the proliferation of cigarette butts found, and all classes became involved with in-depth

discussion about the problems posed by smoking. Therefore, many of the "Trash Goon" posters morphed into warnings about smoking habits, as well as thoughtless littering.

Remediation Strategy: Development of faces (yes, even ugly ones) reinforced by previous lesson called "Cartoon Catalog", where a series of steps were taken to develop a symmetrical face on an "x & y axis" by drawing a cross lightly in pencil. Beneath the x-axis, eyes were drawn, nose on lower half of y-axis, and then other facial features built around them. Newer students who had not experienced this lesson were given a portion of it as part of this lesson. All students were reminded of the usefulness of these steps in creating a cartoon face for this project.

Skill Reinforcement: for grade 3-5 students, use of cursive lettering was emphasized in the writing of slogans. Students practiced cursive on rough-drafts, as part of a "sketch" before commitment to lettering on "Trash Goon" poster. This proved to be quite successful, and reinforced skill in Language Arts Standard: Penmanship 1.4 – Write fluidly in cursive or joined italic.

Adopted Instructional Materials and Other Resources:
Paper
Pens, pencils, rulers
Illustration of "Wabash Trash Goon" from U.S. Navy flyer made by Allan.

Description/Procedure:

- Show "Wabash Trash Goon" flyer, tell story of its use to address a littering problem aboard a Navy Ship on which I was stationed. The sloppiness of some of the sailors threatened closure of the ship's recreational facilities by order of the captain. Compare this event to similar behavior at schools, beaches, streets etc.
- Let students contribute stories of their own about thoughtless littering behavior. Ask what might happen if everybody acted so thoughtlessly?
- Suggest we make our own sarcastic cartoons for posting at places where littering problems have occurred. "Let's protest pollution and get the message to those who cause problems".
- Students draw one or more "Trash Goon" cartoon flyers. Flyers should be neatly done. Imagery may look disgusting, but inappropriate words and depictions should be avoided (get comments from students on where we draw such a line). Accompanying cartoons should be a "persuasive" statement (1 sentence-1 short paragraph, perhaps a poem). Write statement rough draft on scratch paper to edit it. Put final statement draft on paper with cartoon using art lettering.

Note: From idea in SEER commentary – This cartoon activity can be applicable after audit is done, and can focus on problem areas found in audit. Therefore, the "Trash Goon" idea can be revisited, thus making the initial "Trash Goon" cartoon a preassessment baseline, and later cartoons a form of assessment of students' gained consciousness of issues discovered in audit.

Teacher: David Allan

Timeline: Sept/Oct this project is also a good awareness-getter for starting out Needs Assessment, but it may be used between other assignments and projects.

Assessment/Rubric:
Is cartoon done carefully, with thought, imagination, and patience? No,1-yes,4
Is statement clear, concise, and with well-chosen (and colorful) words? 1-4
Is lettering neat and readable, and imaginative? 1-4

SCIENCE/ART/MATH/HISTORY

3. COASTAL CLEANUP Field Trip Project

An all-school effort in collaboration with California Coastal Conservancy statewide campaign. This is the first such project connected with Coastal Cleanup Day to take place on the Big Sur Coast. The Pacific Valley students were the "pioneers" for future efforts of this kind, and this may be linked as an expansion to the UES CNA audit.

Standards:
SCIENCE
6b – Students know different natural energy and material resources, and know how to classify them as renewable/non-renewable.
Math:
2.2 – Apply strategies and results from simpler problems to more complex problems.
History:
Chronological and Spatial Thinking (6-8) - Trace the ways in which people have used
the resources of local region and modified the physical environment.
Art: (All these standards connect with "Trash Goon" Lesson – seen notes under
Pre-assessment heading)
5.2 – Create a painting, satirical drawing, or editorial cartoon that expresses personal opinions about current social or political issues. (grade 8)
2.5 – Select specific media and processes to express moods, feelings, themes, or ideas. (grade 6)
2.7 – Create…works of art that express a personal statement demonstrating skill in applying the elements and principles of design. (grade 7)
3.7– Communicate values, opinions, or personal insights through an original work of art. (grade 5).

Standards-based Learning Objectives:

- From a student-developed list of found waste items from school activity, students accurately classify in renewable/non-renewable categories.
- Meaningfully present claims about our waste output based on data and calculations.
- Ability to relate how our patterns of resource usage and waste output compare and contrast with that of human civilization preceding ours

- Be able to present some of these comparisons in context with resource
  usage/waste generation/environmental impact determined for our contemporary local school life.
- connection to learning objective stated in “Trash Goon” lesson.

Pre-Assessment: Questions speculating what we may find on beach, based on instructions and data sheets supplied by Coastal Conservancy, and what may be sources and causes behind categories listed on data sheets.

Remediation Strategy: Briefing of students in class preceding field trip day (Oct 17). Review of processes in instructions included with Coastal Conservancy material and data sheets before beginning of field trip. Letter to parents describing project and significance. Enlist parent participation to assist children with data tally records keeping.

Materials: Data sheets and instructions supplied by Coastal Conservancy. Plastic gloves, and bags for collection and sorting of recyclable and non-recyclable items.

Description/Procedure:
*As described in Remediation Strategy, students are briefed. It is emphasized that this project is far more than a cleanup service. It is also a “health check” of the beach, like a doctor taking a pulse. The findings will reveal a lot about how the beaches are being treated by the public.
*Students grouped into four field outings to local area beaches: K-2, Willow Creek, 3-6, Mill Creek, 7-8, Willow Creek, 8-high school, Limekiln Creek State Park.
*Students sub-divided into teams, each with a records-keeper, who tallies collected items on data sheet. With K-3 teacher acts as records keeper. Parent volunteers assist. Each item found is presented to records keeper who tallies on data sheet. Process continues with the spirit of a “treasure hunt”!
*On return from outing, students questioned about what conclusions they have drawn from what they found. Any patterns? What could be the sources of items found? Any patterns revealed in findings? What problems with the beaches are indicated by the findings? What could be the solutions to the problems?

Teacher: David Allan, with parent volunteers

Timeline: Sept 8-12, set up field trip, contacts with Coastal Conservancy/California Coastal Commission regional coordinator, receive data sheets and instructional material. Sept 15-16, Brief students in preparation for project procedure. Sept 17, conduct field trip project in class groupings, K-2, 3-5, 6-7, 8-high school at local beach locations. After trip, conduct question/discussion follow-up of collection data, possible conclusions from findings. Sept 22, submit data to Coastal Conservancy regional coordinator. ***Discuss possible plan for initiating an Adopt-A-Beach program in future.

4. VIDEO: “WHERE DOES OUR GARBAGE GO?’

A creative and entertaining “newscast” of what happens to our resources after we have used and thrown them away, based on observations and key questions asked

during a field trip to MRWMD facility site. (Combined cross-curricular project of Art and Science classes.)

Standards:
Art – 2.3, grade 5, Demonstrate beginning skill in manipulation of digital imagery (incl. Video), 2.6, grade 6 & 7, 2.3, grade 8, Use technology to create original works of art.
2.5 – Select specific media and processes to express moods, feelings, themes, or ideas. (grade 6)
Science – 6b, knowledge of different natural material and energy resources, and know how to classify them as renewable and non-renewable.
7d – Communicate the steps and results from an investigation in written reports and oral presentation.

Standards-based Learning Objectives: 1G, 3A & B, 4A & C, 5A, B, & C. Students demonstrate knowledge and comprehension of where our resources end up following usage. Demonstrate through a video recording with expository narration the process of the waste stream to landfill, recycling, and reuse, with background information comparing and contrasting what is shown with past (historical), present, and what we could do to help in future.

Adopted Instructional Materials and Other resources:
CIWMB material
Map and literature supplied by MRWMD (Heidi Feldman)
"Kids Talk Trash" video
"Where Does Garbage Go?" booklet
Video recording equipment. Costumes, props, illustrated visual-aides created in Art classes.

Description/Procedure:
* Show material from CIWMB and MRWMD in Art and Science classes.
*Discuss historical waste streams and resource usage in history classes concurrently.
*Field trip to MRWMD with stated mission of recording process that take place there through video recording of waste processing activities, video-taped interviews by students of both MRWMD personnel and students themselves. Conduct student "newscast" with narration by student "reporters" and "anchor personnel".
*Students make list of variety of materials that go through MRWMD transfer station…and where it goes (recycle? Landfill? Reuse -sell at "Last Chance Mercantile"?
*Students write reflections of observations at MRWMD through expository paragraphs. These paragraphs may be used in video recorded narrations.

Pacific Valley School

MRWMD Video Field Trip, Dec 8, 2003

AGENDA and SCRIPT

*Depart school by 8:15 am
*Arrive MRWMD, 10:30am

Location stops at MRWMD:

1. Scales, watch for 10-15 minutes, note vehicles passing through and business taking place. (10:30-10:45)
   Questions:
   - What and who passes through the scales?
   - What are they hauling?
   - How are their loads weighed? Why is weighing done?
2. Recycle Bins: look in each bin. (10 minutes, 10:45-11:00)
   Question: What is sorted in each bin?
3. MRF: watch action for 20-30 minutes. (we may be allowed to get out of van here, Heidi will check with manager at that time.) (11:00-11:30)
   Questions:
   - What is being unloaded here?
   - What machines and equipment is being used?
   - How FAST are people and machines working?
   - What is being unloaded at the MRF?
   - What items are being separated as recyclable? What is being separated as non-recyclable…bound for the landfill?
4. Conveyer Belt: watch for 15 minutes. (11:30-11:45)
   Questions:
   - What is going onto the belt?
   - What is being pulled off the belt?
   - Where do you think those items being pulled off will go? (To Mercantile?)
   - Where do the left over items go? (Landfill?)
5. Wood Yard: Watch for 15 minutes. (11:45-12:00)
   Questions:
   - What's going on here?
   - What material is being processed here? (Trees? Vegetation? Building materials?)
   - What products are being made from stuff brought in here?
   - What could be the use and value of these products?

12:00-12:30 – Lunch at garden. We will try a "ZERO WASTE LUNCH". We will eat from containers that we can take back to school and reuse.

6. Landfill: Watch for 15-20 minutes. (12:30-12:50)
   Questions:
   - What is being dumped? (everything)
   - How big are the volumes of dumped stuff? (huge truckloads!)
   - Can you spot anything that could have been reused or recycled, and was missed?
7. Landfill Gas Plant: Look at for 10 minutes (12:50-1:00)
   Questions:
   - Where is the gas coming from?

- Where is it going?
- How valuable is this gas?

8. Last Chance Mercantile: Tour for about ½ hour. Include a look at the Household Hazardous Waste Program (HHW) facility located here. (1:00-1:30)
   Questions:
   *Imagine you are planning to build a clubhouse for our class group.
   - What could you buy here to build and outfit that clubhouse? (Use your imagination!)
   - How would you use the materials and items you select?

   (it would be useful to make a list, adding things as you spot them)
   - What (toxic) items are at the HHW?
   - What could happen if those toxic materials got into the landfill? And into the ground water, which is pumped from wells, and which we drink?

*__Final questions:__ (Ask these questions at the end of our visit at the Last Chance Mercantile…these questions and answers could be edited and made into **a public service announcement.**)

- **Is the public throwing away valuable resources?**
- **How efficiently is this facility at rescuing valuable resources?**
- **Who is ultimately responsible for preventing valuable resources from being wasted?**
- **What can we all do to help?**

Depart MRWMD about 1:30. Drive home will take about 2 hours. We should return in time for the end of the school day.

MRWMD Field Trip Video "Newscast" Interviews- ORGANIZATION:

1. **We will video a portion of each stop on the tour, as a newscast.**
2. **At each stop, each student will have a different role. One student will act as the interviewing news reporter. He/she will ask the others the questions listed for that stop. At least two of the other students will act as narrators, answering the questions asked by the interviewer, and describing what they see.**
3. **The interviewer may ask other questions, as interesting action is observed, and is worth talking about.**
4. **Two of the students will also act as recorders, writing down notes about the observations, comments, and answers to the questions in the interview.**
5. **Joyce will video the interview activity from different angles to create an interesting action scene.**
6. **Students should rotate roles at each stop, so there will be different interviewers, and different narrator/commentators.**

7. **I encourage students to "Ham it up", being animated and theatrical when they conduct videotaped interviews. Use gestures and facial expressions. We do not want a boring production!!!**
8. **A final tip…look at the videocam when you talk! This will give "stage presence" and make for better audio recording.**

Teachers: Allyson Schreiber, David Allan, Joyce Duffy

Timeline: Late October through mid Jan 2004, activities spread through Science, Art, Garden, and possibly Language Arts Classes.

SCIENCE/MATH

5. DEVELOPING/CONDUCTING AUDIT

With input from students, finding ways to identify, measure and extrapolate resource input/waste output during the course of the function of our school as a system. Students carry out one or a series of investigative projects that accomplish these objectives. We will begin with a look at the solid waste output.

Audit Background Information

In doing this waste audit we hope to help our school realize how much waste we create each year. We want to improve our school's waste management system. We are trying to conserve natural resources.

A natural resource is something that is helpful and that nature gives us. There are two types of natural resources: renewable and nonrenewable. A renewable resource is capable of being replaced by natural ecological cycles if we are careful with our earth. A nonrenewable resource is something that cannot be remade.

People throw away many items such as paper, glass, aluminum and more. Many renewable and nonrenewable resources go into making these products as wall as energy. In order to get these resources people mine, drill, cut down trees and other things. This is difficult and harmful to humans and animals. It can knock out forests; remove topsoil and ruin animals' homes.

By doing this audit we hope to help our school realize that we should do more recycling, reusing and composting. It all starts with us and it affects us in the long run.

We want to close the loop at our school and influence other schools to do the same by our example.

Standards:
Science:
6a, 6b, grade 5. Knowing natural origins of materials used in common objects, ability to classify resources as renewable and non-renewable.
Math:
Number Sense 1.2 – Interpret and use ratios in different contexts
1.3 – Use proportions to solve problems.
Statistics, Data Analysis, Probability 2.5 – Identify claims based on statistical data, and in simple cases, evaluate validity of claims.
Mathematical Reasoning 2.1 – Use estimation to verify reasonableness of results.
4.2 – Apply strategies and results from simpler problems to more complex problems.
4.3 – Use a variety of methods (words, numbers, graphs, models) to explain mathematical reasoning.
Measurement/Geometry, 1.3 (Grade 5)– Understanding concept of volume and use appropriate units in common measuring systems.
Algebra/Functions, 1.1 (Grade 5) – Use information taken from a graph to answer questions about an (environmental) problem.

Remediation Strategy: Include a lesson and discussion to build comprehension of systems, including definition, parameters, and types of systems, components, and aspects of a system as a total.

Description/Procedure:
*Planning discussion to identify and “brainstorm” ways to track resource input, use, and subsequent waste result. Students will suggest ways to go about this task for possible future implementing.
*Try initial project with each student spending a normal school day with a collection bag for all waste material produced in the course of the day. Students place all discarded items in bag instead of normal trash receptacles etc. After collection day, items are sorted into categories representing the resources from which they were produced, whether they are reusable, recyclable, or destined for landfill “storage”. Categorization may also be tracked for renewable and non-renewable nature of resources from which groups of items came. Measurements of material bulk done for both weight and volume
*Students create charts reflecting data in noted categories, using quantification by both weight and volume.
*Using math skills and techniques, students calculate projections of resource consumption/waste output/renewability/non-renewability for an average day, week, month, year, …and beyond. Similar projections made for other aspects of school functions, such as office, kitchen etc.
*From data figures and charts, students develop graphs for categories reflecting calculations and projections. Charts organized to develop an image of the school’s overall material resource processing, as a system.

Waste Audit Unit Overview

Days	Have each student collect and keep their trash for a day
1-2	Analysis of their trash- Remediation and background for conducting the following: *weigh and measure as a whole *divide into reusable, recyclable, and landfill categories *weigh and measure quantities in each category *renewable/non-renewable DRA
3	*Vocabulary flash cards *Connection map with resources and collected trash *"Where does the trash come from, and where does it go?"
4-5	Begin Audit Pre-lab: Write purpose and background info., procedures, hypothesis, and materials.
6	Conduct audit *collect trash generated in course of school day, using data collection and analysis procedures and methodology developed in previous sessions.
7	Calculate data
8	Organize data into charts and graphs
9	Interpret data. Write a conclusion.
10	Research recommendations, e-mail an expert?, Internet?, interviews with school staff.
11	Write recommendations

Procedure Timeline: Jan, 2004, as follows:

PACIFIC VALLEY SCHOOL

Science Class

Waste Audit

Lesson Procedure

Day 1

Show pen and pencil.
Ask what they are made of and have students brainstorm ideas/materials.

Pre-assess with a 10 minute write to answer questions

1. What things do we depend on?
2. How do we use the environment to build our homes?
3. How do we affect other organisms in order to get the things we depend on?
4. What does conservation mean?

Have students share answers.
Students work on a collage depicting the things they need from the environment.
Each student is allowed to interpret this question as they wish.
Pass our small trash bags to each student and have them place all the trash which they generate in the next 24 hours in that bag. They will bring the bag to class the next day.

Day 2

Have students take out their collages and share with each other the things that they need from the environment, and how they interpreted that question.

Have students brainstorm where our trash goes.
Landfill, compost, recycling, reuse
Divide their trash into those four categories.
Create a data table where they will measure their trash for each category.
Have students weigh each category of trash and record information in data table.
Brainstorm about ways larger quantities of trash might be measured.
Place 7 containers before the students with the following in them. These containers represent the natural resources on the planet.

1. yellow ball = sun
2. empty = air
3. water
4. foil = mineral
5. soil
6. piece of a plant
7. picture of an animal

Have students guess which each container represents as well as what the group of containers represents.
Discuss what natural resources are and mention fossil fuels, how they loosely can be considered a mineral, but they are almost always considered a natural resource.

Day 3

Introduce students to the terms renewable and non-renewable and ask them to brainstorm what they mean.
Create preliminary definitions with the students.
Look over the 7 containers again and ask them to divide them into 2 groups, renewable and non-renewable.
Tell the students that they are going to learn more about this by doing some internet research.
Have students read about resources on the following web page.
http://www.eco-pros.com/renewableresources.htm
Create flash cards for natural resources, renewable and non-renewable resources.

Day 4

Start day with the question & have students brainstorm answer:
What do cars, spoons, glasses, dishes, beverage cans, coins, electrical wiring, bricks, and sidewalks have in common?
They are all everyday objects made from nonrenewable resources that we have learned to extract from earth's crust?
Have students complete the People & Resources worksheet
-taken from Ready to Use Earth Science Activities for the Elementary Classroom by Debra L. Seabury
-research answers using dictionary and share answers with classmates

Student Answers

Resource	**Description, Uses, what would we do without it?**
Bauxite	Ore found in rocks, aluminum, we would have to find another way to make cans
Sand	Found on beaches, used in glass and cement, we would be confused and the price of glass would go way up

Wood Pulp	Wood that has been mechanically and chemically broken down for making paper, makes cardboard, we would have to go back to the slate ages
Petroleum	Oil from sedimentary rocks, plastic, gasoline, we would need to find another way to run cars and generate energy
Iron	Found in rocks and soil, used to make weapons and skyscrapers and steel, we wouldn't have skyscrapers and steel, and weapons
Coal	From sedimentary rock, fuel, new kind of fuel and energy (power)
Leather	Animal hides, clothing, we will not be in a fashion state anymore
Cotton	Made by plants, use it to make clothing, w wouldn't have cotton clothes
Rubber	A substance that is made out of the sap of many tropical trees, elastic, tires, shoe soles, we'd have a very sticky problem for tires and for cars and have to wear moccasins all over again.

Day 5

Lesson Idea from A Child's Place in the Environment, Lesson 12, People Obtain and Use Minerals
Have students brainstorm what minerals they use in their everyday lives, some of which we looked at the other day in class
Show students the minerals used in a home worksheet
Show students the minerals used to make a ton of glass worksheet
Read out loud with students about the way we mine minerals from the earth: surface mining and underground mining
Discuss which minerals are mined which ways
Complete mining activity
    Have students build their own mine sites

Day 6

Wrap up mining activity by asking students if they would like to restore the land.
    Introduce students to the federal law about restoration and restoration costs
Discuss with students the destruction their mining caused,
Read about the environment impacts and the pollution caused by mining minerals
Discuss this with students
Have students brainstorm the most common pieces of trash: glass, paper, plastic
    They now know what is required to produce paper, glass,
Now we will look at what goes into plastic production
Introduce oil/petroleum drilling = raw material for plastics
    Have students get on Internet and go to:
        http://science.howstuffworks.com/oil-drilling.htm
    Read through website with students, highlighting key information about what the environmental impacts of oil drilling are.

Day 7

Have students create a connection map with the most common trash products: glass, paper, plastic, and aluminum
They will work together to create a poster showing everything that is involved in production of these products

Day 8

- Closing the loop: Students brainstorm and create on the board a loop

    - Beginning with humans, students look at the categories of wastes generated
    - Students then look at what happens to those wastes: landfill, recycling, waste, reuse
    - Students then look at what needs to happen after reuse, recycling, & composting in order to close the loop
    - Loop is drawn up on the board
- Students begin Audit Pre-Lab
    - Students write the background information for their lab as a group by summarizing on the board what they have learned in the proceeding days and what they hope to accomplish with their audit.
        - Natural Resources
        - Closing the Loop

Day 9

Audit Pre-Lab

- Students write waste audit survey procedure
    - Determine the categories of waste which they are going to measure and how they are going to estimate the volume of waste produced by our school in a twenty-four hour period
- Students determine materials needed for survey
- Students create surveys for various office staff including questions about how well our school is "closing the loop"
- Students use other waste audit survey questions (from example waste audits) to come up with additional survey questions for staff
- Students create data table for audit

Audit instruction sheet for use by students

Materials:

- 3 30 gallon trash cans with labels
- 23 gallon trash cans/buckets with labels
- trash bags
- rubber gloves
- aprons

Procedure

1. Obtain & label audit trash cans: recyclable, waste, reusable, compost.
2. Empty existing trash cans.
3. Put audit trash cans in place during science.
    a. Kindergarten room
    b. 3rd -5th room
    c. Math room
    d. Science room
    e. Language Arts room
    f. Art room
    g. Office
    h. Brad's office
    i. Wood shop
    j. Outside Kitchen
    k. Kitchen
    l. Bathroom = 1 trash can labeled waste
4. Collect trashcans in twenty-four hours, during next science class.

5. Sort trash into the 4 categories.
6. Estimate the volume of trash in each category in gallons.
7. Record information in a data table.

Day 10

Audit

- Students set up audit during science class, following their procedure
- Students pass our survey

Day 11

Audit Data Collection

- Students work to collect the trash generated around the school during the audit day and record the information into a data table
- Students collect staff surveys

Day 12

Recommendations

- Students brainstorm a list of recommendations based upon the data they collected and the information they received via the surveys
- List of recommendations with go to the Language Arts class so that they can write the conclusion to their lab report there.

Audit Recommendations for our School
(This is the complete list developed by students
from implementation of Audit lesson project)

1. Making paper from recycled paper
2. Making sure each room has compost, recycling, reuse, and trash cans
3. Introduce more students to recycling area with a presentation about importance & how the system works at the school
4. Put in a recycling center up above
5. Time set aside in day for sorting recycling & emptying compost
6. Put boxes for reusable paper in rooms
7. Collect reusable for a trash sculpture in art
8. Go to other schools to share a Presentation & teach them how to make recycled paper

Note: The following sample Audit Survey form was one of several designed and submitted by students to all staff members at school. Separate similar forms were created for the Administrative office, Cafeteria, etc.

Teacher Survey

1. Do have recycling in your room?

    a. If so, what type of recycling containers do you have?

2. Do you encourage your students to recycle?

3. Who takes the recycling from your room?

4. Do you know where the recycling is taken?

5. Do you know how the recycling is sorted?
6. Do you have compost in your classroom?
7. Do you encourage your students to compost?
8. Do you buy post consumer recycled content products?
9. Do you reuse reusable items in your room?
10. What improvements would you make to the schools waste management system?

Recommendations from this list will be found in "Script" for Presentation to School Board

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Math Class Audit lesson

- Volume
  - Discuss volume with students
    - What is volume?
    - How can we estimate volume?
    - How can we estimate volume for our audit?
  - After data collection:
    - Introduce students to data representation
      - Bar graphs & Pie Charts
    - Have students use Microsoft Excel to graph data
  - Use math to estimate yearly totals for the school in each category
  - Use math to estimate waste generation per person per year in each category
  - Use math to put numbers per person in each category in terms of 30 gallons trash cans so that the volume can be better understood by the students in our school.

Teacher: Allyson Schreiber, collaboration with Carl Grover

ART/SCIENCE

6. POSTERS FOR PRESENTATION

Graphs, findings and conclusions visualized, our recommendations for more effective waste management, how we can control our impact on Big Sur's environment.

Standards: 2.7, grade 5, communicate values, opinions, and personal insights through original work.

Standards-based Learning Objectives: 4A, graphs, illustrations, design and lettering layout.

Adopted Instructional Materials and Other resources:
Art tools- including poster board, foam core board, pens, color pencils, paints, collage materials.
Computers-color printed images from websites, Word art, Digital photos etc. for collaging to posters.
MRWMD and CIWMB materials for reference.

Description/Procedure:
***This project is a collaboration between Science and Art classes. Students will research, create and develop posters in both classes through coordinated class time.
*Ideas and reflections from audit and field trip activities discussed in both Art and Science classes. Students discuss and think about what would be major themes for posters. They will decide what their posters' main ideas will be, and what messages will be included. Facts and opinions will be sorted and selected for support of each poster's main idea.
*Draft layouts will be made as pencil sketches. Students will be encouraged to make multiple sketches, and select one that works best.
*Material components will be painted, drawn, lettered, downloaded and printed, and collected for assemblage.
*Materials assembled on boards using sketches as guides. Layout/design principles will be covered and discussed, including balance, emphasis (focal point), harmony (color and decorative coordination), variety (of features, for interest), and unity (all elements contributing to main idea, both visually and verbally
*Posters to be exhibited at presentation to community and Board members. Perhaps, a ballot for "audience's choice" can be implemented to select a poster to win a prize, as added incentive.

Teacher: David Allan, collaboration by Allyson Schreiber

Timeline: Jan/Feb 2003, following field trip and completion of audit activities.
*Presentation at Feb 10 Board meeting.

7. TRASH MONSTERS

Assemblages characterizing theme that "waste is a human-made monster we must control"

Standards: 2.5, grade 5, assemble a found-object sculpture reflecting a theme…

Standards-based Learning Objectives: 4B, create eye-catching, creative assemblages from selected discard items to effectively project theme “trash, a monster we must control”.

Adopted Instructional Materials and Other resources:
Art texts, gallery exhibit and auction manuals, and photos, showing assemblage sculptures from modern art historical periods and genres.
Collected items from community recycling center.
Possible limited collecting from MRWMD facility (with permission and weight/volume limits).
Discard items contributed by parents and staff members.

Description/Procedure:
*Define “assemblage”
*show and discuss photos of famous assemblages and related sculptures in exhibit books.
*Draft a design plan of “monster” on paper. Plans will be part of grade for project.
*Discuss design key principles, particularly focal point, and unity. Monsters must convey main idea of theme. Simpler sculptures with well-built and concise elements will get more credit than overly complicated ones that are randomly assembled, showing little thought as to where each part goes.
*Using plan as guide, assemble “Trash Monster”. Assemblage parts must be durably put together; sculpture must be freestanding, and easily transported. No hazardous protrusions or materials. It will be encouraged that students have sculptures with moving parts, and interactive elements for observer (such as levers, cranks, buttons etc.).
*Sculptures may be exhibited at community and Board presentation. Possibly, a ballot for “audience choice” award will be implemented for this project as well.

Teacher: David Allan, instructional assistance provided by Gail Dinsmore

Timeline: Feb 2003, or may be fit between other time-sensitive projects.

Rubric:
Does sculpture convey theme? Do assembled parts function to contribute to main idea? 1-4
Has student taken care and time to durably and aesthetically assemble sculpture. Is thought demonstrated in assembly, or is it assembled in a random fashion without planning? 1-4
Does it attract interest and interaction from audience? 1-4

LANGUAGE ARTS/SCIENCE/ART/HISTORY

8. PRESENTATION OF AUDIT FINDINGS TO AUDIENCE OF SCHOOL BOARD AND COMMUNITY MEMBERS

Students develop a “total performance” consisting of speeches from written descriptive and expository paragraphs covering the audit findings, and

recommendations for improvement of efficiency, increasing sustainability of the system function of the school, and focusing on renewability of the resources used. The video "newscast will also be broadcast to the Board upon final completion. Presentation will be supported and enhanced by exhibit of student-made maps, posters, and "Trash Monster" assemblage sculptures.

Standards: (Language Arts) Writing 2.3 Write research reports about important issues. Listening/Speaking 1.0 Deliver presentation that conveys ideas.

Description/Procedure:
*Using audit findings; data, tables, charts, graphs, and discussions in all classes, students compose scripts for presentations by individuals or groups to be spoken to the audience.
*Scripts may be coordinated with PowerPoint imagery sequences, as well as visual aids in the form of posters created in the Art classes.
*Rehearsals to develop "stage presence" and theatrical quality to maximize impact may be done in Art, Language Arts, and Science classes.
*Historical connection may be developed by comparing and contrasting audit findings with inferences of how such an audit would look, and what data might result if this project were conducted on an ancient Ohlone village, or a pioneer settlement in our region in the historical past.

SCRIPT FOR BOARD PRESENTATION

ALISON: We looked at the waste that our school generates in one single day
BLAZE: We went to every classroom and office and placed containers marked: **RECYCLE, TRASH, REUSE, AND COMPOST**.
(Dakota holds up signs while this is said.)
ALISON: 24 hours later, we collected the waste cans and brought them to the recycling area.
BLAZE: Then, we sorted all the waste into four 30 gallon trash cans and estimated the amount in gallons in each
ALISON: From there, we estimated the amount of waste our school produces all year. These graphs show our results.
(Hold up graphs)

DAKOTA: In our one-day audit, we found that RECYLE and TRASH are the two highest forms of waste. *(holds up two signs)*

44% or our waste is Recyclable and <u>that's good</u>

27% of our waste is just trash and <u>that could be a lot better!</u>

ALISON: We now have some recommendations for our school's waste management program. Our favorite recommendations are:

DAKOTA: Make new paper from the recycled paper

BLAZE: Introduce all our students to the waste management program
ALISON: Go to other schools to share our presentation and teach them how to make recycled paper

DAKOTA: This ends our presentation. Thank you for listening.

Language Arts Classwork for 7th grade February 25th & 26th

(by Teacher, Joyce Duffy, Final Written Project Report by students following Audit Presentation to School Board,)

READ THESE DIRECTIONS CAREFULLY!

1. Make sure you do your regular journals and reading logs.

2. WRITE YOUR FINAL PROJECT REPORT FOR THE WASTE AUDIT:

- This report should be in essay form; that means a complete essay with introduction, details and conclusion, at least 5 paragraphs in length.

- Use
    1) the information from your "Background Information" essay,
    2) the surveys
    3) the trash audit data
    4) the script from your School Board Presentation
    5) your graphs

- Your conclusion should include your recommendations

***Put it in your own words, and make it sound interesting to the reader. Most of the work has been completed; you just need to organize it and write it up. MAKE SURE YOU CHECK FOR SPELLILNG, PUNCTUATION, AND CAPITALIZATION!

3. TYPE YOUR FINISHED REPORT, SAVE IT TO YOUR FOLDER UNDER 7TH GRADE, AND CLOSE IT. OPEN YOUR REPORT AGAIN ON THE WHITE COMPUTER AND PRINT IT OUT.

(If you should miraculously complete this perfect essay, you may work on SRA in my classroom, or practice for your next timed typing test. You may not use the Internet or play games on the computer.)

Teachers: Allyson Schreiber, Joyce Duffy, artistic support by David Allan

Assessment: Based on Language Arts rubrics for speech presentations. Assessment of visual presentations from lesson assessments for "Posters", and "Trash Monster" lessons. Basis also on reception by members of Board: A survey may be taken of members and audience indicating the impact on them by the students' presentation.

ASSESSMENT STRATEGIES:

1. Products, including written material, visual art products, including posters, assemblages, video. Assessed by rubrics established by teachers, and addressing whether evidence of cited standards approached/met/exceeded.
2. Data collected by students, rated by Science Teacher for comprehensiveness.
3. Questions and discussions about data.
4. Reflection of gained knowledge and awareness in activities following audit, including "revisit" of Trash Goon posters and other expressive visual products.
5. Presentations to Board, and other venues, such as elementary classes, "Ambassadors" project to other districts, and SURMOUNT Day of Sharing Arts and Cultures with visiting schools (May 2004). Response to presentations. Possible presentation to Big Sur agencies at multi-agency meeting.
6. Implementation of new procedures on campus in response to audit findings.

COLLABORATIVE INSTRUCTIONAL TEAM:

1. David Allan, Art Teacher/Project Coordinator. Plans sequence of instruction with other members. Teaches lessons #1, 2, 3, 6, and 7. Assists with lessons #5 and 8.
2. Allyson Schreiber, Science/History teacher. Develops Science and History-related lessons with David Allan. Teaches lessons #5, assists with lessons #6 and 8.
3. Gail Dinsmore, Garden/Recycling instructor. Assists with lessons #4, 5, 7, and 8. Will assist with future extensions of lesson #3, with Adopt-A-Beach activities. Provides input and technical assistance to Allan in developing effective procedures.
4. Carl Grover, Math/Woodworking teacher. Teaches Math aspects of lesson #5, works with Allyson Schreiber in team teaching lesson #5 components.
5. Joyce Duffy, Language Arts Teacher. Teacher components of lesson #8, develops written and oral elements of presentation with students, in concert with Allyson Schreiber, David Allan, and Gail Dinsmore. Conducts videography for MRWMD Field Trip video interviews and observations.
6. Brad Bailey, Superintendent/Principal. Supervises progress of CNA lesson implementation. Coordinates planning of presentation with School Board. Provides input and assistance where needed.

TIMELINE:

1. Oct 13-27 - Development of CNA Connections Set and Lessons: Aug 25-Sept 28. First revision Oct 3-13. Final revision Oct 27.
2. Sept 9-30 - Conduct Lesson #1, "Map of Where I Learn".
3. Sept 23-Oct 1 - Conduct Lesson #2: Possible additional "Trash Goon" creations after Audit is completed, as an assessment tool.
4. Oct 17 - Lesson #3 Coastal Cleanup field trip project. Possible Adopt-A-Beach segments periodically throughout remainder of school year.
5. Dec 8, 2003(MRWMD Field Trip)/Jan 2004 - Lesson #4 "Where Does the Garbage Go?" video: Field trip component, Dec 2003 Editing of video: Jan 2004.

6. Dec 2003-Jan 15, 2004 - Lesson #5 Developing/Conducting Audit: Preliminary lesson, class time on designing and organizing “experiment”, November. Conducting audit, collection of data (with trash), December. Analyzing data (perhaps a separate lesson), January 2004.
7. January/Feb, 2004 - Lesson #6 “Posters for Presentation”, in conjunction with data analysis portion of Audit.
8. Feb/Mar, 2004 - Lesson #7, “ Trash Monsters”.
9. Jan/Feb, 2004 - Lesson # 8 Presentation – Writing elements begin upon completion of analysis portion of audit, January 2004. Present at Feb 10, Board meeting. Other mini-presentations (as an idea) may be given to elementary classes, PTO, and a form of it may be given to students at neighboring school districts as part of a new program we are planning, titled “Ambassadors for the Arts and Environment”. (More on this as we develop it!) These adjunct presentations may occur between March and May.
10. Dec 27, 2003-Jan 31, 2004 – Draft and submit mid-year progress report.
11. Jan/Mar 2004 Development and submission of Year Two Plan.
12. Mar 19, 2004 - SEER Site Visit. Development of Year Two Plan with entire staff team.
13. Mar 31, complete and submission of Year Two Plan package with final revision of Campus Needs Assessment.
14. April- June 2004, continue lessons and activities bridging Phase One and Campus Needs Assessment with Phase Two. This will include the “Ambassadors for the Arts and Environment” outreach project to other school districts, collaborative activities with U.S. Forest Service (in process), and extensions of lessons within Campus Needs Assessment.
15. June 2004, Summer Institute for UES team.

WORK PLAN:

1. Development of CNA Connections Set and Lessons: Aug 25-Sept 28. First revision Oct 3. Second revision Oct 13. Third revision, Dec 31, 2003.
2. SEER/OIEE site visit, planning and assistance, Oct 22
3. Refinement of plans, Oct 23-Nov…continuing development of plan and lessons as a dynamic entity.
4. Development of new project idea: “Ambassadors for the Arts”, in which groups of students make Arts-related presentations, as “teachers” to classes as neighboring school districts. A watercolor lesson has been planned at Cambria Elementary School District by grades 8-9, Oct 17.Environmental aspect will be a good fit…more on this soon, to be developed and implemented as part of Year Two Plan!
5. Conduct Lesson #1, “Map of Where I Learn”: Sept 9-30.
6. Conduct Lesson #2: Sept 23-Oct 1. Possible additional “Trash Goon” creations after Audit is completed, as an assessment tool.
7. Lesson #3 Coastal Cleanup field trip project, Oct 17. Possible Adopt-A-Beach segments periodically throughout remainder of school year.
8. Lesson #4 “Where Does the Garbage Go?” video: Field trip component, Dec 8, 2003. Editing of video: December-Jan 2004.
9. Lesson #5 Developing/Conducting Audit: Preliminary lesson, class time on designing and organizing “experiment”, November. Conducting audit, collection of data (with

trash), December 2003-February 2004. Analyzing data (perhaps a separate lesson), January 2004.

10. Lesson #6 “Posters for Presentation”, January, 2004, in conjunction with data analysis portion of Audit.
11. Lesson #7, “ Trash Monsters”, February 1-10, 2004
12. Lesson # 8 Presentation – Writing elements begin upon completion of analysis portion of audit, January 2004. Present at Feb 10 Board meeting. Other mini-presentations (as an idea) may be given to elementary classes, PTO, and a form of it may be given to students at neighboring school districts as part of a new program we are planning, titled “Ambassadors for the Arts and Environment”. (More on this as we develop it!) These adjunct presentations may occur between March and May 04.

13. Draft and submit Mid-Year Progress Report. Due Jan 31, 2004
14. SEER/OIEE Site Visit, staff day, work with entire staff team on development of Year Two Plan, Mar 19, 2004.
15. Jan-Mar 31, 2004, work with team to develop Year Two Implementation Plan.
16. Mar 31, Submission of Year Two Implementation Plan (before this date).
17. April- June 2004, continue lessons and activities bridging Phase One and Campus Needs Assessment with Phase Two. This will include the “Ambassadors for the Arts and Environment” outreach project to other school districts, collaborative activities with U.S. Forest Service (in process), and extensions of lessons within Campus Needs Assessment.
18. May 2004, Celebration/presentation to guest school districts at “SURMOUNT” Day of The Arts, where Pacific Valley School hosts neighboring school districts for a day of sharing cultures, Arts, and games. This would be a perfect venue for a UES related presentation.

“Bulletin Board”

OTHER IDEAS FOR FUTURE USE CONTRIBUTED BY SEER (JAYNE HENN), OIEE (DON PERI), HEIDI FELDMAN (MRWMD), AND PUSD STAFF MEMBERS:

- Student to student communications between schools/districts, including visuals, pen pals, adaptations of “Ambassadors for the Arts & Environment” – communicating needs/ situations and innovations. (SEER)
- Communication setup with another school (perhaps with another UES participant school) where students exchange letters/essays, poems etc. This could be another lesson in the Campus Needs Assessment in Language Arts. (Jayne Henn, SEER)
- Public Service Announcements. Anti-litter, raising awareness about waste and its impacts. (SEER, OIEE)
- **“The Travelling Cigarette Butt”** theme idea for PSA, idea could be used as cartoon poster or storyboard for PSA (Jayne Henn, SEER)
- PSA through MRWMD’s program for airtime on KMST or KOIN TV channels (Heidi Feldman, MRWMD)
- Video showcasing PUSD’s environment enhancing procedures in cooperation with CIWMB. Video could parallel Oak Grove School District’s video. (Don Peri, OIEE)

- Ethnic recycled art creation and presentation through a videotape or exhibit. Possible collaboration with Art Cooperative of Monterey. (Feldman, MRWMD)
- Anthropology/Science unit in CNA on “Garbology” (SEER, MRWMD)
- **Adopt-a-Beach** program participation, and Surfrider Foundation beach “health-check” monitoring program (Allan)
- Language Arts classes write essays or scripts for video productions (SEER)
- Separate History lesson in CNA on “Trash Through the Ages”, history of landfills, from ancient middens, to archaeological sites in different ages, to more modern landfills (non-sanitary types, dumps – like the ones in Sand City and Fort Ord), to the state-of-the-art ones like MRWMD. (Henn, SEER, Feldman, MRWMD)
- **Earth Day Pizza Party** Art contest project, projection of environmental messages on a 4’x4’ pizza-shaped backing for MRWMD facility exhibit, sponsored by MRWMD
- **Rodale Institute, Organic Garden Multi-Curricula Project** for school garden. Include subjects taught through use of garden, lesson enhancement, essay project, and contest. (Brad Bailey)
- **Ambassadors for the Arts and Environment:** outreach teaching project by students to other school districts. Develop and implement as a series of field-trip visits to regional schools for the purpose of an Environmental Stewardship/Art peer teaching experience for students, and spreading of gained UES learning to school districts outside the UES program. (David Allan/Brad Bailey)
- **Collaborative with U. S. Forest Service:** an array of service learning projects contributing to the Los Padres National Forest (Ventana Wilderness and Big Sur Coast), coordinated through USFS Ecosystem Manager, Jeff Kwasny. Several cooperative projects have been done and are in process from Dec. 2003 to present (Mar 2004). (David Allan/Jeff Kwasny, USFS)

UES PROGRAM
LESSON PLAN BLANK FORM

Note to teacher: This blank was made to help in providing me with input of lesson plans you would like to contribute to the UES Waste Management Campus Needs Assessment project. You may the sheet of "Standards-Based Connections Set/Learning Objectives" we made at the UES workshop (for each subject) as a guide. You may also use my Art lesson plans as a prototype. Please fill out a copy of this form for each lesson you would like to integrate into this undertaking and submit it to me. If you want to do it on computer, and submit it on a disk, that would be even better!

Thanks for your cross-curricular collaboration … David Allan

Lesson Title:

Standards:

Standards-based Learning Objective:

Adopted Instructional Materials and Other Resources:

Description/ / Procedure:

Additional Notes and Comments:

Timeline:

Submitted by / Curricular Subject: